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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/723,566

11/26/2003

Carl E. Fabian

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25901

7590

02/25/2008

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EXAMINER

GILBERT, SAMUEL G

ART UNIT

PAPER NUMBER

3735

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/723,566	<b>Applicant(s)</b> FABIAN ET AL.	
	<b>Examiner</b> Samuel G. Gilbert	<b>Art Unit</b> 3735	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 November 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9, 11-14, 17, 22, 24 and 26 is/are pending in the application.
- 4a) Of the above claim(s) 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9, 11-14, 22, 24 and 26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

The statement of rejection has been changed to include prior art set forth in the rejection but left out of the "statement of rejection", therefore this office action has not been made final.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9, 11-14, 22, 24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fabian (5,057,095) in view of VonHoene et al.(5,338,373), Irizarry et al (2002/0005783), Herzer (6,359,563, Tanji et al (6,407,676 and Anderson, III et al (4,510,490).

Claims 12-14, 22, and 26 – Fabian teaches a system for detecting surgical implements using a magnetomechanical marker having a resonant frequency. The range of operation of the system is set forth below about 1 gigahertz. The operation range includes three types of resonance, magnetomechanical, electromechanical and electromagnetic. The specific range of operation of the magnetomechanical resonance is not set forth. However a variety of specific material is set forth for the marker including Fe<sub>40</sub>Ni<sub>38</sub>Mo<sub>4</sub>B<sub>18</sub>, column 4 lines 50-59. Further, column 5 lines 3-6 indicate the resonant frequency may be preselected. The only guidance set forth regarding the

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resonant frequency selected is that it is one used by a conventional system, column 8 lines 9 and 10, as pointed out by the applicant. The applicant argues that a conventional system uses a resonant frequency much lower than the claimed range of 70-300 kHz typically 58 kHz. If Fabian only teaches such a marker, having a resonant frequency of about 58 kHz, the marker would be about 3.8 cm in length. Element –34- is a magnetostrictive amorphous alloy, element –36- is a bias means, and a housing is provided by elements –38- and –31-. The examiner is taking the detecting antenna to be proximate the operating room. Using an interrogating field is set forth in column 3 line 7. A step of detecting is set forth in column 3 lines 14-21. Indication means are set forth in claim 2 and are inherently activated. Element –15- is an interrogator, element –28- is a detection means, and indicating means are set forth in claim 2.

Fabian does not teach a specific range of frequency or a plurality of elongated magnetostrictive strips disposed in a cavity in non-parallel orientation.

VonHoene et al. teaches the use of different length markers and the concept of modifying the markers to expand the number of different markers available to allow identification of marked items by the marker applied to them. The known relationship between the length of the marker and resonant frequency is set forth. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the length of any known marker out of the finite number of known markers set forth in VanHoene and thereby changing the resonant frequency proportionally as is

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taught by VonHoene et al. (a resonant frequency of 120.21 kHz is set forth in table 1 for a marker having a length of 1.80 cm). A shorter marker has a higher resonant frequency while a longer marker has a lower resonant frequency. Table 1 sets forth markers and resonant frequencies for markers having a length of 1.8 cm to 6.4 cm. Further, claim 13 calls for markers having a length from about 2 cm and about 5.0 cm. Therefore, it is the examiner's position that markers having a length of 1.8 cm (120.21 kHz) to 6.4 cm (33.28 kHz) were known in the art prior to the filing of the current application.

It would have been obvious to one of ordinary skill in the medical art at the time the invention was made to make the marker of Fabian having a plurality of different lengths including one having a frequency of 120.21 kHz and 1.8 cm in length for the magnetorestrictive element. Such a frequency is within the range set forth by Fabian and known in the marker art. Providing markers of different lengths allows different articles to be identified by the tag which is applied to the article as set forth by VonHoene.

The combination of Fabian and VonHoene teach a device as claimed by the applicant having the claimed frequency range but includes only a single strip of magnorestrictive metal.

Irizarry et al teaches a magnetomechanical marker teaching two non-parallel strips to increase the detection rate of the marker, paragraph [0034]. It would have been obvious to one of ordinary skill in the medical arts at the time the invention was

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made to include the concept of non-parallel strips as taught by Irizarry et al with the marker taught by the combination of Fabian and VonHoene et al to provide the benefit of increasing the detection rate of the marker, as taught in paragraph [0034] of Irizarry et al.

The combination of Fabian, VonHoene and Irizarry teaches a device as claimed including the frequency range and a pair of nonparallel magnetorestrictive strips. Irizarry teaches that each of the strips are housed in separate housing while Fabian teaches only a single housing. The applicant argues that in such a combination the magnetorestrictive elements would be in separate housing and not in a single cavity.

It is old and well known in the marker arts to provide a plurality of magnetorestrictive strips in a cavity in a single housing, such structure is set forth in Herzer (6,359,563), Tanji et al (6,407,676) and Anderson, III et al (4,510,490). Herzer uses multiple strips to reduce the width of the marker. Tanji uses multiple strips to reduce the width of each frame, column 6 lines 52-64, and Anderson et al uses different length strips to provide signal identity. It would have been obvious to one of ordinary skill in the marker arts at the time the invention was made to place the strips of the combination of Fabian, VonHoene, and Irizarry in a single cavity in a single housing in place of two separate housings for gaining one or all of the advantages set forth by Herzer , Tanji et al and Anderson, III et al.

Claim 11 - Irizarry et al and Herzer teach strips of the same length.

Claim 22 - a surgical instrument and tag are set forth in Figures 6a and 6b of Fabian.

Claim 24 - Tanji et al teaches strips on both sides of the bias means.

Claim 26 - "ring down" and dipole field is set forth in column 4 lines 33 and 34 of Fabian.

### ***Response to Arguments***

The applicant argues that the present inventive marker has a significantly reduced size. The examiner has not found any size limitations in the recited claims.

Regarding the combination of Fabian and VonHoene the applicant argues that VonHoene fails to disclose multiple, non-parallel resonant strips, the Examiner agrees. However, the examiner has only used the teachings in VonHoene to teach markers having a resonant frequency between 120.21 kHz and 33.28 kHz.

The applicant argues that VonHoene teaches resonant strips having resonant frequencies set forth in table I but not a marker including such a strip and further argues that only a marker having an actual length 3.81 cm and a resonant frequency of 56.68 kHz is set forth. To provide an increased universe of markers VonHoene modifies to marker to set an "effective" length and a discernable set of markers with different "effective" lengths.

In response it is the examiner's position that the teachings of VonHoene et al is not limited to the examples II-VI using markers having 3.81 cm actual length includes the entire disclosure set forth. Table 1 sets forth a marker having a length of 1.8 cm

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and a resonant frequency of 120.21 kHz. Further the description of the table includes the known relationship of frequency and length for resonant markers. It is known that as the length of the marker is shortened the resonant frequency increases for markers of the same material. The Examiner would like to point out claim 13 which claims a marker having a length from about 2.0 cm to about 5.0 cm. Therefore it is the Examiner's position that Table I sets forth length of markers not just strips as argued by the applicant.

The Applicant further argues that VonHoene teaches only changing the effective length of the marker. It is the examiner's position that VonHoene teaches modifying the effective length of markers having an actual length of 1.8 cm to 6.4cm to provide an increased universe of markers. Modifying the effective length of markers having an actual length of 3.81 cm would increase the number of available markers but only by a small number. Modifying effective lengths of markers having different actual lengths would greatly increase the number of available markers.

The applicant has argued that various combinations of references do not set forth a method or apparatus as claimed, however the combination as set forth in the rejection in total has not been addressed by the applicant. Further, the applicant has not addressed the teachings of the Tanji et al reference, teaching a single bias element between strips in a single housing.

### ***Conclusion***



Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel G. Gilbert whose telephone number is 571-272-4725. The examiner can normally be reached on Monday-Friday 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor II can be reached on 571-272-4730. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Samuel G. Gilbert/  
Primary Examiner, Art Unit 3735

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